

Dealer's Prices—1962-1963

**For Quantity
Discounts
Please See Page Six**

TERMS AND CONDITIONS:

Prices are wholesale and for the trade only.
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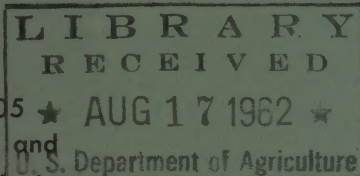
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Growers of **LILIES**—exclusively



An entirely new descriptive and illustrated catalog will be ready for distribution in the spring of 1962. This catalog shows suggested retail prices. A free copy will be mailed to you. Additional copies \$0.50 each; \$40.00 per 100—postpaid.

Our terms of sale are those customary in our trade; 2% discount for cash payment within ten days from date on invoice; or thirty days net. We sell f.o.b. our farms. Please make all checks payable to Oregon Bulb Farms.

Our business is exclusively wholesale. No orders will be accepted from parties not actually engaged in the seed or nursery trade. While we seldom fail to complete accepted orders, we reserve the right to omit any part of an order, should unexpected or unavoidable shortages occur. We do not substitute unless authorized. With our packaged collections we reserve the right to substitute equal or better varieties in any collection. Where such a substitution is made, the labels will be altered to show exact contents.

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GR.—GREX OR STRAIN; CL.—CLONE

Wholesale prices for the trade only. All prices per hundred except where noted, cases, packing free, f.o.b. our farms, subject to prior sale.

A.M.—AWARD OF MERIT
F.C.C.—FIRST CLASS CERTIFICATE

HOLLANDICUM (Umbellatum) Type	Size	5-6"	6-7"
Division 1— <i>L. dauricum</i> hybrids			
Coronado (Rainbow) Hybrids	gr.	\$ 24	\$ 30
Golden Chalice Hybrids	gr.	24	30
Golden Wonder	cl.	60	75

MID-CENTURY HYBRIDS	Size	5-6"	6-7"
Division 2— <i>L. tigrinum</i> hybrids			
Cinnabar, red	cl.	36	45
Croesus, golden yellow	cl.	24	30
Destiny, lemon yellow, A.M.	cl.	26	32
Enchantment, nasturtium-red, F.C.C.	cl.	20	24
Fireflame, mahogany-red	cl.	36	45
Harmony, deep orange, A.M.	cl.	30	36
Joan Evans, golden orange	cl.	24	30
Palomino, buff	cl.	100	120
Paprika, red	cl.	36	45
Prosperity, pure yellow	cl.	24	30
Sunstar, orange-red	cl.	36	45
Tabasco, red, A.M.	cl.	36	45
Valencia, soft orange	cl.	24	30
Mixture, all types & colors	gr.	20	24

NOVELTIES	Size	5-6"	6-7"	7-8"
Beacon, bright orange	cl.	each	\$2.00	
Conquest, upright yellow	cl.	"	2.00	
Gem, upright deep red	cl.	"	2.00	
Royal Sovereign, yellow	cl.	"	2.50	
Sunspot, deep red	cl.	"	2.50	
Torch, orange	cl.	"	5.00	
Victory, Aug.-flowering, orange	cl.	"	6.00	

MARTAGON-HANSONI HYBRIDS	Size	5-6"	6-7"	7-8"
Division 3—(Backhouse Hybrids)				
Achievement, ivory-white	cl.	75	100	140
Gay Lights, bronze	cl.	75	100	140
Paisley Strain, all colors	gr.	60	75	100

HARLEQUIN HYBRIDS	Size	4-5"	5-6"	6-9"
Division 5—(<i>L. cernuum</i> hybrids)				
All colors mixed	gr.	32	36	45

BELLINGHAM HYBRIDS	Size	5-7"	7-9"
Division 6—Hybrids from American native lilies.			
Afterglow, red	cl.	36	45
Buttercup, yellow	cl.	40	50
Shuksan, orange, F.C.C.	cl.	32	40
Sunset (<i>L. pardalinum</i> gig.)	cl.	24	30
Mixture, all colors	gr.	24	30

EASTER LILIES	Size	6-7"	7-8"	8-9"
Division 7— <i>L. longiflorum</i> varieties				
<i>L. longiflorum</i> var. Croft	cl.	24	30	42
<i>L. longiflorum</i> var. Estate	cl.	24	30	42
<i>L. longiflorum</i> tetraploid	gr.	60	75	90

FIESTA HYBRIDS	Size	4-5"	5-6"	6-7"
Division 8— <i>L. davidii</i> hybrids				
Bronzino Strain	gr.	\$ 36	45	50
Burgundy Strain	gr.	36	45	50
Citronella Strain	gr.	24	30	36
Golden Wedding Strain	gr.	36	40	45
Mixed Colors	gr.	24	28	32

TRUMPET LILIES	Size	6-7"	7-8"	8-9"
Division 9— <i>Species and hybrids</i>				
Black Dragon	cl.	60	75	90
Black Magic Strain	gr.	40	50	60
Carrara Strain	gr.	50	60	70
Green Dragon	cl.	45	55	65
Green Magic Strain	gr.	40	50	60
Olympic Hybrids	gr.	24	28	32
Olympic Select	gr.	30	36	45
Pink Perfection Strain	gr.	50	60	70
Regale Royal Gold	gr.	50	60	70
Sentinel Strain	gr.	50	60	70

AURELIAN HYBRID LILIES	Size	6-7"	7-8"	8-9"
Division 10-A— <i>Trumpet types—L. henryi</i> hybrids				
African Queen Strain	gr.	60	75	90
Copper King Strain	gr.	100	120	140
Emerald Strain	gr.	40	50	60
Golden Clarion Strain	gr.	36	40	45
Golden Splendor Strain	gr.	45	50	60
Limelight F.C.C., '59	cl.	100	120	140
Moonlight Strain	gr.	75	90	100

NEW VARIETIES	Size	6-7"	7-8"	8-9"
Brass Band, golden	cl.	each	\$ 6.00	
Emerald Isle, white	cl.	each	3.00	
Golden Spur, golden	cl.	each	2.40	
Goliath, white	cl.	each	3.00	
Helios, soft yellow	cl.	each	3.00	
Honeydew, lime yellow	cl.	each	12.00	
Luna, soft yellow	cl.	each	4.00	
Masterpiece, golden	cl.	each	6.00	
Patrician, deep gold	cl.	each	7.50	
Pioneer, golden	cl.	each	3.00	
Red Gold Strain	gr.	each	3.00	
Verona, pink	cl.	each	5.00	

HEART'S DESIRE TYPE	Size	6-7"	7-8"	8-9"
Division 10 B (bowl shaped)				
Inspiration Strain, pink	gr.	each	\$ 2.00	
New Era, largest white	cl.	100	120	140
Sunlight, A.M.R.H.S. '61	cl.	each	\$ 2.00	
T. A. Havemeyer, bronze	cl.	50	60	70
Mixture, all colors, new	gr.	75	85	100

GOLDEN SHOWERS TYPE	Size	6-7"	7-8"	8-9"
Division 10-C				
Cathedral, golden	cl.	each \$6.00		
Golden Showers Strain	gr.	100	120	136
Gold Standard	cl.	each \$6.00		

SUNBURST TYPE	Size	6-7"	7-8"	8-9"
Division 10-D				
Bright Star, A. M.				
orange & white	cl.	40	50	60
Coraline, coral, A.M.	cl.	40	50	60
Good Hope, new	cl.	75	90	100
Golden Sunburst Strain	gr.	45	50	60
Happy Day, orange	cl.	50	60	75
Ivory, white	cl.	40	50	60
Orange Sunburst Strain	gr.	75	90	100
Silverine, white	cl.	100	120	130
Silver Sunburst Strain	gr.	75	90	100
Stardust, white & amber	cl.	75	90	100
Thunderbolt, A.M.R.H.S. '61	cl.	75	90	100
Mixture, all colors	gr.	45	50	60

TIGER LILY HYBRIDS (late-flowering)	Size	6-7"	7-8"	8-9"
Division 11				
<i>L. maximowiczii</i> & <i>L. tigrinum</i> hybrids				
Bingo, light yellow	cl.	each	\$ 6.00	
Bounty, rich yellow	cl.	each	3.60	
Gingersnap, orange-red	cl.	each	1.00	
Headliner, yellow	cl.	each	6.00	
Jack-pot, orange	cl.	each	1.60	

AURATUM LILY HYBRIDS	Size	6-7"	7-8"	8-9"
Division 12—Red				
Empress of India	cl.	each	\$32.00	
Imperial Crimson	gr.	each	2.00	
Jamboree Strain, A.M.	gr.	each	2.00	
Jillian Wallace, A.M.	cl.	each	1.50	
Potomac Strain	gr.	each	1.50	
Red Band Hybrids	gr.	each	2.00	

White	Size	6-7"	7-8"	8-9"
Empress of China	cl.	each	\$36.00	
Flying Cloud Strain	gr.	each	5.00	
Imperial Silver Strain	gr.	each	2.00	

Pink	Size	6-7"	7-8"	8-9"
Pink Glory Strain	gr.	each	\$ 5.00	
Golden Banded				
Empress of Japan	cl.	not for sale		
Angel Wings Strain	gr.	each	\$ 6.00	
Imperial Gold Strain	gr.	each	4.00	

SPECIOSUM VARIETIES	Size	6-7"	7-8"	8-9"
Mapleton Strain	cl.	36	45	60
Red Champion Strain	gr.	30	36	45
Superstar Strain	gr.	60	75	90
White Champion Strain	gr.	45	56	72

LILY SPECIES	Size	3-4"	4-5"	5-6"	6-7"	7-8"	8-9"
amabile	\$ 24	30	36				
amabile luteum	30	36	45				
auratum var. platyphyllum					42	50	60
auratum var. virginale					100		
brownii var. australe	150	200					
cernuum	30	36					
concolor	30	36					
concolor var. coridion	60	75					
formosanum var. pricei	18	24					
formosanum Wallace Strain	18	24					
formosanum var. wilsoni	18	24					
japonicum var. platyfolium		45	50				
kelloggii	300	400					
lankongense	24	30					
longiflorum var. Croft					24	30	42
martagon (pink form)			60	75			
martagon var. album			75	90			
martagon var. dalmaticum			200	250			
monadelphum		100	120				
nepalense var. robusta	100						
papilliferum	200						
parryi	300	400					
polyphyllum	500						
pumilum (tenuifolium) (Coral Lily)	12	18					
pumilum var. Butterball	500	600					
pumilum var. Golden Gleam	12	18					
regale					15	18	24
rubellum	sold out						
speciosum var. album					45	56	72
speciosum var. rubrum					30	36	45
italiense	120	150					
tsingtauense		175					
wardii	120	150					
wilsoni var. flavum		30	36				

The Complete Book of LILIES

by F. F. ROCKWELL, ESTHER GRAYSON and JAN de GRAAFF

RETAIL PRICE \$5.95 DEALER'S NET PRICE \$4.00

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It is obvious and customary in the trade that large orders merit a better price than small orders. For this reason, we have decided upon a definite scale of discounts, as follows, and orders from \$100.00 to \$500.00 will earn a 10% discount; from \$500.00 to \$1,000.00 will earn a 15% discount; from \$1,000.00 to \$2,500.00 will earn a 20% discount; from \$2,500.00 and over will earn a 25% discount. These discounts are for all combined purchases in the full calendar year and are in addition to the usual 2% for cash within ten days from date of invoice. These discounts apply only to orders placed with us for delivery within the United States of America by bona-fide horticultural dealers. Because of the complications connected with the export of all horticultural products, we cannot possibly allow discounts to any foreign dealer or grower, beyond the usual 2% discount for payment within ten days from date of invoice.

July-August

THE AMERICAN

Summer 35¢

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JAN DE GRAAFF □ *Our Victorian lady at right embraces a bouquet of garden lilies that are spanking new and delightfully different. They are man-made and distinct from any nature has produced. For more centuries than we can tell from history, lilies have flourished and bloomed all over the Northern Hemisphere—in mountain meadows, on coastal plains, in hedgerows, among low-growing shrubs, singly, in scores, and in hundreds and thousands. And as long as man has been aware of them he has cherished them as a symbol of beauty, purity, and faith. Why, then, should he want to change something he has found so wondrously endowed by nature? For the very same reason that he long ago changed most other flowers that he specially liked: to improve their adaptability to garden use. The wonder is that he put off doing so for such a long time! For it seems to have been only recently that he realized why so many of the most admired wild lilies are difficult to cultivate—that plants conditioned to the specific soils and climates of so many parts of the world cannot be expected to flourish in the very different environment of our gardens. The regal and tiger lilies come from China, the Madonna lily from the mountains of northern Africa, other species from Siberia, India, Yugoslavia, and the mountains of Spain. And the North American lilies are found in almost every climatic region that our vast continent includes. How could plants from such distinct regions be made to grow equally well under garden cultivation, where not only the soil and climate are strange to them but where our ways of growing plants and our use of* (continued on page 64)

WE GILD, OF ALL THINGS, THE LILY



sprinklers, fertilizers, shade trees, and other competitive plants all make for vastly different conditions from those to which lilies have adapted themselves in nature?

Obviously, if they were to become adaptable, easy-to-grow plants, many lilies would have to be changed. That could be done only by hybridization and selection, which in time could be expected to produce greater vigor and, by combining various characteristics, to result in increased tolerance of garden conditions. So a concerted program of lily hybridization and selection was started.

The results have been truly remarkable. In a shorter time than any other plants have been "domesticated," lilies have evolved from rare, difficult-to-grow natives of the wilderness into vigorous, easy-to-manage, dependable garden plants. What's more, these new lilies include an enormous variety of colors, flower forms, and plant heights, and their flowering seasons run from May to September.

Just how easy to grow are they? Actually, they need the same growing conditions as many other popular garden favorites. Plant them in loose, mellow, well-drained soil that's just slightly acid (pH 6-6.5). If the soil in your area is too acid, you can alkalize it with lime; if it's too alkaline, you can acidify it with peatmoss and aluminum sulphate. Your county agricultural agent, at the county seat, will tell you how much of either material to use to produce pH 6-6.5.

Choose a sunny spot for your lilies where they'll get sunshine for at least half the day and where the air circulates freely. Don't plant them too close to strong-growing or shallow-rooted shrubs and trees, with which few herbaceous perennials can be expected to compete. And don't plant them near old lilies or striped ("broken") tulips, which may carry virus diseases. Even though they are not injured by the disease themselves, they may infect healthy lilies.

Loosen the soil thoroughly with a digging fork, spade, or rotary tiller, and plant the bulbs as soon as you get them. Lilies are never really dormant, and the shorter the time the bulbs are out of the soil the better.

Don't plant them too deep. For large bulbs, 4 inches of soil over the top of the bulb is the right depth; for smaller ones, 2 to 3 inches of soil over the top of the bulb is right. A lily bulb has contractile roots and can pull itself down if it is planted too shallow, but it cannot push itself up if too deep.

Since the new lilies are vigorous plants, they need regular feeding—once or twice every spring. I've found the standard complete fertilizers, used as directed on the package, quite satisfactory. I've also supplemented these occasionally with bonemeal and fish fertilizers with excellent results.

Insect and disease control is as important to lilies as it is to most other garden plants. So spray or dust them with a combination insecticide-fungicide (such as a rose preparation) every week or two during the growing season. And, like most herbaceous perennials, lilies need regular, abundant watering during dry spells.

When you cut lilies, don't take too much stem, because the stem and leaves are important to the bulb when it's storing food for the following year's growth.

The new garden lilies can be classified into twelve major groups, each distinguished by its own characteristic type of foliage and bulb, habit of growth, and flower color and form.

Division 1 includes the early upright-flowering lilies of China and Japan,



The De Graaff lilies pictured on page 35 are represented in the drawing above as follows: 1, 'Sunstar'; 2, 'Croesus'; 3, 'Harmony'; 4, 'Bright Star'; 5, 'White Pearl.'

similar kinds from Europe, and hybrids such as 'Golden Chalice' and other upright-flowering strains.

Division 2 comes from crossing the Division 1 lilies with the tiger lily and includes varieties which face upward and outward. Among them are 'Enchantment,' 'Harmony,' 'Prosperity,' and 'Destiny.'

Division 3, based on hybrids between Lilium martagon of Europe and L. hansonii of Japan, contains the 'Paisley Hybrids' in lovely shades of orange, salmon, pink, and brown.

Division 4 includes the lilies derived from the lovely white Madonna lily, Lilium candidum, still quite rare.

Division 5 includes hybrids of the beautiful lilac-colored lily from Korea, L. cernuum. These 'Harlequin Hybrids' come in lilac, pink, salmon, maroon, white, ivory, and golden yellow. Their little bell-like flowers sway in the breeze and are the delight of every gardener who grows them.

Division 6 is made up of American native lilies, crossed and recessed ever since Luther Burbank started breeding them. In Windsor Great Park, the horticultural wonderland of the British Royal family, they grow in huge clumps, equally at home as in any American garden.

Division 7 is made up of the so-called Easter lilies, which are not widely used for outdoor planting.

Division 8 is represented by the 'Fiesta Hybrids,' in a wide variety of colors, which stem from Chinese species of exceptional hardness.

Division 9 is derived from the Chinese trumpet lilies, the best known of which is the regal lily (L. regale). These hybrids include the lovely 'Olympic,' 'Pink Perfection,' and 'Green Magic' strains.

Division 10 is an exciting one, for it contains the hybrids created by crossing trumpet lilies with the strong-growing, lime-tolerant, recurved, orange-flowered Lilium henryi. They include a wide variety of colors and forms, among them the flaring 'Sunburst' and bowl-shaped 'Heart's Desire' strains, and all are hardy, disease-resistant, and vigorous.

Division 11, as yet, has few examples. It's based on lilies that flower in late summer, the original stocks of which were introduced by the U. S. Department of Agriculture only a few years ago. This group offers unusual promise in orange and red, late-flowering lilies.

Division 12, now almost a hundred years old, has recently been enhanced by the creation of some of the most beautifully exciting lilies of our time. They're derived from the gold-band lily (L. auratum), the florist's "rubrum" lily (L. speciosum), L. japonicum, and L. rubellum. Outstanding among them are the 'Imperial Crim-

son,' 'Imperial Silver,' and 'Imperial Gold' strains and the magnificent named varieties, 'Empress of India,' 'Empress of Japan,' and 'Empress of China.'

All these kinds of lilies are classified by height, color, and flowering season

in the table on page 66. Those whose names begin with the letter L (for Lilium) are wild species; those whose names are enclosed in single quotation marks are hybrid varieties (all virtually alike) or hybrid strains (more or less variable).



Lily hybridist Jan de Graaff, right, was awarded the 1962 American Home

Achievement Medal "for outstanding contribution to America's enjoyment of gardening." He was selected from a slate of 12 candidates by the presidents of over 40 national horticultural organizations.

Presentation of the medal was made at the Men's Garden Club of New York flower show luncheon in March by American Home Editor Hubbard H. Cobb, left, and Garden Editor Theodore A. Weston.

LILIES FOR AMERICAN GARDENS

Short (Under 30")					
	White	Yellow	Orange	Red	Pink
MAY		'Golden Chalice' 'Golden Wonder' L. pumilum 'Butterball'	L. pumilum 'Golden Gleam'	L. pumilum	
JUNE	'Achievement' L. martagon album	'Croesus' 'Destiny' 'Prosperity' L. amabile luteum	'Coronado Hybrids' 'Harmony' 'Joan Evans' 'Sunstar' 'Valencia' 'Paisley Strain'	'Cinnabar' 'Enchantment' 'Fireflame' 'Paprika' 'Tabasco' L. amabile L. concolor L. concolor 'Coridion'	L. japonicum platyfolium L. martagon L. rubellum
JULY	L. longiflorum 'Croft' L. longiflorum 'Estate' L. longiflorum 'Tetraploid' L. formosanum pricei		'Palomino' L. tsingtauense		L. cernuum
AUG.		L. wilsoni flavum	'Victory'	L. papilliferum	

Medium (2½ to 4 ft.)						
	White	Yellow	Orange	Red	Lilac	Pink
MAY						
JUNE		'Buttercup' L. monadelphum				
JULY	'Green Dragon' 'Green Magic' 'Olympic Hybrids' 'Olympic Select' 'Sentinel Strain' 'Emerald Strain' 'Emerald Isle' 'New Era' 'Bright Star' 'Stardust' L. taliense L. polyphyllum	'Citronella' 'Golden Wedding' 'Royal Gold' 'Golden Clarion' 'Golden Splendor' 'Limelight' 'Moonlight Strain' L. regale	'Shuksan' 'Bronzino' 'African Queen' 'Copper King' 'Happy Day'	'Afterglow' 'Sunset' 'Burgundy'	'Pink Perfection'	'Verona' L. kelloggii L. lankongense L. wardi
AUG.	'Empress of China' 'Flying Cloud' 'Imperial Silver' 'Empress of Japan' 'Angel Wings' 'Imperial Gold' L. auratum platyphyllum L. auratum virginale L. browni australe L. formosanum 'Wallace Strain'	'Golden Showers' L. parryi	'Ginger-snap' 'Jack-Pot'	'Empress of India' 'Imperial Crimson' 'Jillian Wallace' 'Red Band Hybrids' L. martagon dalmaticum	'Pink Glory'	'Potomac Hybrids'
SEPT.	L. speciosum 'White Champion'					'Mapleton Strain' L. speciosum 'Red Champion' 'Superstar'

Tall (Over 4 ft.)					
	White	Yellow	Orange	Red	Pink
MAY					
JUNE					
JULY	'Black Dragon' 'Black Magic' 'Carrara'	'Helios' 'Luna'			'Inspiration'
AUG.	'Ivorine' 'Silverine' 'Silver Sunburst'	'Sunlight' 'Good Hope' 'Golden Sunburst'	'Coraline' 'Orange Sunburst' 'Thunderbolt'	'Jamboree'	
SEPT.	L. formosanum wilsoni		'T. A. Havemeyer'		

PRICE
25¢



FORCING LILIES 1963 LILIES for CUT FLOWERS

Quoted by special permission from notes prepared by:

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INTRODUCTION

In order to grow a crop of lilies successfully the grower has to rely pretty largely upon his own experience. However, we can suggest cultural details and prepare a schedule based on several years' experience, to guide the grower to get in his crop in time for Easter.

Variability in a crop of lilies may depend upon several factors: - growing conditions in the field vary from one place to another; the type of weather that prevailed may have been different over the previous year; temperature and moisture prevailing during the storage period plays a very important role; and then there is variability from year to year of the amount of light that this crop receives at the greenhouse.

SOME RESULTS OF RESEARCH ON EASTER LILY FOR 1960 (Cornell Bulletin 179, Nov. 1960 by Derek Smith and R. W. Langhans)

It is believed that temperatures play an important role in the forcing of the Easter crop. These workers set up an experiment having five different night temperatures and five different day temperatures. They also studied the effects of day length periods at several of these temperatures. The results for studies on temperature are given in the table following.

Night Temperature (°F)	Day Temperature (°F)				
	50	60	65	70	80
50	155 *	141	137	133	132
	4.1**	4.6	4.8	4.7	4.6
	14 ***	15	14	14	16
60	124	110	109	101	107
	4.6	4.5	4.8	5.1	4.4
	14	16	17	18	18
65	116	105	106	106	103
	4.4	4.8	4.7	3.4	3.6
	14	17	16	12	17
70	103	95	96	86	87
	4.7	3.9	2.5	2.5	2.4
	15	17	13	19	21
80	83	81	78	81	75
	3.0	2.3	1.7	1.7	1.7
	17	17	16	17	23

* Number of days to flower
 ** Average number of flowers
 *** Height in inches

The data show the number of days to flower, the average number of flowers per bulb and the height of the lily plant above the pot. From the results reported here the indication is that to get lilies in from 125 days to 110 days, then a night temperature of 60°F., and 60° to 65°F for day temperatures, is ideal. Lower day temperatures than night temperatures might be a factor in keeping lilies shorter.

As Cornell reports: "If we regard 100 to 125 days forcing time and an average of not less than 4.4 blooms per plant as being satisfactory, and bearing in mind those treatments which produce the best plants in terms of appearance and foliage color, then the most desirable plants were those produced within the nine treatments blocked off."

In regard to the length of day treatments, those receiving an 18 hour day (LD) were about twice as tall again as those receiving the 9 hour day (SD) length treatments. Those plants receiving the normal day treatment were slightly taller than the 9 hour day.

REVIEW OF RESEARCH PAPERS AT SCIENCE MEETINGS
by Dr. William A. Rosenau

Leaf Scorch

Two papers pursued the relationship of calcium and phosphorus nutrition to scorch in Croft lilies. Mastalerz reported that the intensity of leaf scorch was directly related to the quantity of phosphorus incorporated into the soil prior to planting, but the effect of extremely high levels of superphosphate (50 lbs. per 100 sq. ft.) could be offset by a comparable high level of ground limestone (50 lbs. per 100 sq. ft.). Results of extensive experimentation at the University of Massachusetts by Steckel, Boicourt, White and Field were presented by Dr. Steckel. Their data indicate total dry matter production to be: (1) Increased by soil phosphate level; (2) influenced by bulb source; and (3) unaffected by soil calcium level and limestone levels and sources. The number of scorch lesions per plant was very significantly decreased by increased soil calcium level or limestone level.

Cultural Suggestions for Handling the Lily Crop for 1963

Time of Planting - Lily bulbs, such as Croft or Ace, can be forced into bloom in about 120 days. The Mid-Century varieties can be forced into bloom in about 75 to 90 days, depending on the amount of sunlight. As Easter comes April 14th in 1963, this means that the Easter Lily bulbs should be planted about December 17th. The Mid-Century varieties can be planted by the middle of January.

What to Do for Early Arrival of Bulbs - If bulbs arrive early, store them at 40-45°F until the planting date. Lilies kept at higher temperatures previous to the planting date may take longer to force into bloom and most important of all, they may have the flower count reduced.

Inspect Bulbs Carefully Upon Arrival - Lily bulbs should be carefully inspected upon arrival for any excessive wilting, damage from insects or disease.

Whom Should You Contact? - Call your supplier immediately for any disorder detected and your county agent and/or specialist.

Shall the Bulbs be Grown in Clay or Plastic Pots? - There are numerous advantages for plastic pots. They are lighter to handle; they are as cheap or cheaper; they do not require as much watering and there is a definite saving in labor for there is little if any cleaning. If soil preparation is adequate, the lily bulb seems to grow just as well in plastic as it does in clay.

- What Soil Preparation to Use - Plastic pots - 1 part soil
1 part peat moss
1 part sand (coarse grade)
- Clay pots - 2-3 parts soil
1 part peat moss
1 part coarse sand

What Drainage Should Be Used? - 3/4 to 1" coarse pea stone placed in the bottom of the plastic or clay pot.

Should the Clay Pots be Sterilized? - Sterilize all old clay pots, benches or any area where the crop is likely to come in contact with soil. Sterilize soil, clay pots and other areas for 1 hour at 180°F.

How Can One Sterilize Plastic Pots? - Dip them in a solution 1-20 of any chlorine materials such as Clorox. Dry before using.

Do You Need to Test Your Soil? - If you are using a soil or soil mixture which you haven't had any experience with, then a soil test is in order. Usually a 4" pot each of ground limestone and superphosphate 20% to each three bushels of soil is adequate. Then feed the crop as needed for good development of color.

What Is the Recommended Depth to Plant Lily Bulbs? - We suggest planting the bulb deep in the pot by placing a small amount of soil over the pea stones 3/4 to 1". This encourages stem root formation and is good insurance to carry a crop to maturity in case root rot does show up.

What Are the Recommendations for Lily Bulb Treatments? - First, we would like to emphasize the proper culture needed to bring in a crop of lilies, so that diseases can be kept to a minimum:

1. Proper soil structure and drainage.
2. Proper watering procedures.
3. Proper spacing.
4. If you have sterilized, be careful not to recontaminate the crop. Secondly, if you do get into trouble and need help, use one of the following materials with prescribed dosages.

Dip Treatments

- a. Captan 50% w.p. at 2 tablespoons per gallon and PCNB (Terraclor) 50% w.p. at 3/4 teaspoonful to 1 gallon and allow to soak for 30 minutes.
- b. For an alternative we suggest PCNB w.p. (Terraclor) 1 oz., ferbam 76% w.p. 1 oz., and parathion 15% w.p. at rate of 1 oz. to 3-1/2 gallons and apply at the rate of 1/2 pint per 6" pot.

Dust Treatments - Reported from University of Wisconsin, 1956

- a. Thiram 50% (Arasan dustless type. Be sure to use a respirator).
- b. Zineb 65% w.p. (Parzate or Z-78)

What Are the Diseases Reported to Cause Root Rots on Lilies? - Rhizoctonia, Pythium, Fusarium and Thielaviopsis. No known chemical as yet to control the latter. Cool temperatures are known to be favorable to this disease.

How Shall We Fertilize the Lily Crop? - Results of research show that fertilizer will not cause elongation of the lily stem. Suggest following the time given in the schedule and the types to use:

- | | |
|---|----------------|
| 1. 3 lbs. of 12-12-12 (XL-36) to 100 gals. | - Ace |
| 2. 2 lbs. of 2-20-20 (Cupco) to 100 gals. | - Ace |
| 3. 2 lbs. of 20-0-30 (XL-50) to 100 gals. | - Ace or Croft |
| 4. 1-1/2 lbs. of potassium nitrate and 1-1/2 lbs. of calcium nitrate to 100 gals. | - Ace or Croft |

The schedule calls for feeding Ace five times during the forcing period. In checking out with how many times growers actually feed, we learned that most growers feed four times. We found one grower feeding only once and his crop looked very deficient in nitrogen.

What Is the Secret in Controlling Insects on Lilies? - Be timely in the application and rotate from one type of insecticide to another such as lindane to malathion.

Last spring Systox (Demeton, a systemic insecticide) was used in an experiment by Professors Whitcomb and Garland. They found Systox to be very effective in controlling aphids. Systox should be used at the rate of 1 fluid ounce to 15 gallons of water and applied to the pots as a good watering.

The following is a list of other insecticides for controlling aphids:

1. Lindane 25% w.p. at rate of 1 lb./100 gallons
2. Malathion 25% w.p. at rate of 2 lbs./100 gallons

Caution on Use of Systox - It is a very poisonous material. Wear the proper respirator, rubber gloves and protective clothing as you would for parathion. Houses should be occasionally ventilated to rid them of excess fumes.

Suggested Schedule for Forcing Lilies-1963 Season

		Night Temperature	Day Temperature
ACE		62°F	70°F
CROFT		60°F	70°F
MID-CENTURY LILIES		60°F	65°F
<u>Date Started</u>	<u>Days to Easter</u>	<u>Remarks and Condition of Plant</u>	
December 14th	17 weeks (120 days)	Plant into sterilized soil - 1 part sand, part peat moss, 1-3 parts loam, depending on whether crop is grown in clay or plastic pots. Soil of low salt content. Drainage 3/4-1", pea stones in bottom of pot. Water thoroughly and watch watering until plants are placed on bench.	
December 28th	15 weeks	Plants breaking soil	
January 11th	13 weeks (90 days)	Plants 1" tall.	
January 25th	11 weeks	Plants 1-4" tall, give Croft first feed.	
February 1st	10 weeks	Plants 3-5" tall, give Ace first feed. Spray, dust or bomb (use Systox) for insects.	
February 8th	9 weeks (60 days)	Growth of lily 5-6" tall.	
February 15th	8 weeks	Growth 8-10" tall. Give second feed. Check for insects.	
February 22nd	7 weeks	Growth 12-15" tall.	
March 1st	6 weeks	Buds size of a garden pea seed. Space out plants as much as possible.	
March 8th	5 weeks	Give third feeding. Spray, dust or bomb for control of insects.	
March 15th	4 weeks	Buds 1 1/2-2" long.	
March 22nd	3 weeks	Buds 2-3" long. Still bending down. Give feeding if needed.	
March 29th	2 weeks	Buds 3-4" long. Check for insects. If aphids present, use smoke of dithio.	
April 5th	1 week	If plants are developing too fast, store at 40°F. Water soil well and store when the first bud is just ready to crack open. Mist spray plants with Zineb (1/2 lb. per 100 gals. of water) prior to storage for Botrytis protection. Remove two days before full bloom is desired. Give final feeding in preparation for sales.	
April 14th	EASTER SUNDAY	Preparation for Easter sales - 1 or 2 buds nearly white. Don't ship with all flowers opened.	

The Mid-Century Hybrids, properly pre-cooled can be flowered in 75 days. More experimentation with them is necessary and we should appreciate it if you would return the attached questionnaire.

CULTURAL INSTRUCTIONS FOR LILIES

Soils and Location - Lilies must have perfect drainage such as a gentle slope can provide. Air drainage, too, is important, for a good breeze can keep many garden pests and diseases away. If your site is level and the soil heavy, then prepare raised beds for the bulbs. Take care not to damage the roots in planting.

Sun or Shade - Lilies need sunlight, at least until 2 P.M. Filtered sunlight or semi-shade may bring out the more delicate colors, but they tend to make weak stems and soft flowers. Do not plant near house walls, walks or drives that reflect sunlight or heat.

Depth of Planting - *L. candidum* should be planted with not more than one inch of settled soil over the top of the bulbs. All others need not more than four inches of soil over them.

Mulch and Groundcover - Lilies are gross feeders and root deeply. They need a porous, well-aerated soil, rich in humus and well-balanced plant food. They like a good mulch of well-rotted cow manure, rich compost or decaying leafmold, which can be applied several times during the growing season. The mulch keeps the soil cool, discourages weed growth and eliminates the need for surface cultivation which might hurt the stem roots. Shallow-rooted groundcover keeps the ground shaded and is beneficial. Do not expect your Lilies to compete with strong-growing perennials or shrubs.

Cutting Flowers - Like all plants, Lilies need their stems and foliage to build for next year's growth. Cutting the flowers only, preventing them from setting seed, is beneficial. Cutting the foliage is harmful in direct proportion to the amount taken. Cutting stems with foliage year after year will definitely kill the plant.

Forcing Lilies - It is now a well-established fact that cool storage of most Lily bulbs before planting greatly reduces the time required to bring them into bloom. We have found that bulbs cooled at 32 to 40 degrees Fahrenheit for four weeks, or at 40 to 45° for six weeks, will flower much earlier than untreated bulbs.

After the cold storage period, the bulbs should be potted and held at a temperature of 50° for six weeks. Commence forcing at 60° as soon as the shoots emerge. Later the temperature can be raised to 70° if necessary. Cool off to 60° as the flowers open.

If forced at a night temperature of 60°, the Mid-Century Hybrids flower in about ten to twelve weeks from planting. The Golden Chalice Hybrids also force well but will not all flower at the same time. Some of the newer trumpet Lily strains can also be successfully pre-cooled and forced. Additional research is necessary to establish the correct temperatures and flowering periods.

It has been found that the large size bulbs of many varieties produce heads too crowded for best effect. We therefore recommend the following sizes of the varieties listed and have arranged them in the order that they will flower, after precooling.

Fertilizers - Natural fertilizers are ideal. A handful of balanced fertilizer scattered over every few feet, a pound of wood ashes per every twenty square feet, and such applications repeated two or three times during the growing season, will help to keep the Lilies strong and healthy. If your soil and water are alkaline, then two or three times during the growing season scatter a pinch or two of agricultural sulphur over the soil and water it in. Peat moss, being slightly acid, is good for Lilies. It provides an ideal medium for the stem roots when used as a mulch.

On Arrival - Lily bulbs are never completely dormant. They must be received as soon as possible after digging, hence orders should be placed with your dealer as early as possible. If slightly limp after their long trip, place them in wet peat moss for a few days. They will soon freshen up and should then be planted immediately. Never plant new bulbs where other lilies have failed to grow, and never plant in heavy, soggy soil. They can not be treated like tulip or daffodil bulbs which can be dried out and go completely dormant. Drainage is of paramount importance.

Pot Culture - The soil mixture must be loose and porous. Two parts sandy loam, one of leaf-mold and one of sand is good. An inch of gravel should be placed in the bottom for drainage. Fill the pot half full of soil mix, add a handful of sand, set the bulb on the sand, then surround with more sand. The pot is then filled with soil mix, watered, labeled, staked and placed in a cool place until spring.

2 MINUTES OF YOUR TIME WILL
HELP US A GREAT DEAL!

Questionnaire

ADDITIONAL INFORMATION IS NEEDED IN REGARD TO THE FORCING OF
SOME OF OUR NEWER LILY VARIETIES AND YOUR CO-OPERATION WILL BE
APPRECIATED. PLEASE RETURN COMPLETED QUESTIONNAIRES TO:

THE OREGON BULB FARMS, BOX 512, GRESHAM, OREGON, U.S.A.

NAME OF TESTER _____

1.	Variety*		
2.	Bulb size*		
3.	Precooling by grower - Temperature*	Dates - from	to
4.	Precooling by forcer - Temperature*	Dates - from	to
5.	Date planted		
6.	Type storage after planting		
7.	Type container used		
8.	Soil mix used		
9.	Date brought into greenhouse		
10.	Flowering date		
11.	Day temperature		
12.	Night temperature		
13.	Fertilizer used	Quantity	Frequency
14.	Average stem length		
15.	Average bud count		
16.	Average price per stem		
17.	Percentage making salable stems		
18.	Additional comments		

* Answers to Questions 1, 2, 3 and 4 will be supplied by us. A duplicate of this questionnaire will be furnished to all customers, with each shipment of forcing bulbs.

Many Thanks for your Help!

Lilies for cut flower sales - outside planting

An entirely different use for the hardy lilies is outside planting and cutting at their normal flowering time. With more and more weddings and other functions occurring during the months of May, June and July, a nice source of income can be obtained from lilies cut from such outdoor plantings. Additionally, there is a certain promotional value in being able to supply new lilies different from those available in every shop.

For cut flower sales, the following can be recommended for outside planting:

	Number of Flowers and Buds Cut	Period Available
Tabasco	3-6 flowers	2 weeks
Harmony	3-5 flowers	7 days
Enchantment	5-7 flowers and buds	10 days
Golden Chalice	3-5 flowers	3-4 weeks May
Joan Evans	2-4 flowers	10 days
Destiny	2-4 flowers	10 days (finished 3rd week in June)

TRUMPET LILIES - Plant for two years - cut second year only

	Number of Flowers and Buds Cut	Period Available
Olympic Hybrids	4-8 flowers	2 weeks
Sentinel	4-8 flowers	1 week
Green Magic	4-8 flowers	10 days
Black Magic	4-8 flowers	10 days
Pink Perfection	4-8 flowers	2 weeks
Golden Clarion	4-8 flowers	2 weeks
Sunburst Strain	5-7 (fine for corsages)	3 weeks
Auratum (new hybrids)	3-6 flowers	3 weeks July and Aug.
Speciosum (new hybrids)	3-4 flowers	3 weeks

In every instance, if only short stems are cut, or flowers and pedicel only, the bulb will not be hurt and will flower again the next year.

Questionnaire

ADDITIONAL INFORMATION IS NEEDED IN REGARD TO THE FORCING OF SOME OF OUR NEWER LILY VARIETIES AND YOUR CO-OPERATION WILL BE APPRECIATED. PLEASE RETURN COMPLETED QUESTIONNAIRES TO:

THE OREGON BULB FARMS, BOX 512, GRESHAM, OREGON, U.S.A.

NAME OF TESTER _____

1.	Variety*		
2.	Bulb size*		
3.	Precooling by grower - Temperature*	Dates - from	to
4.	Precooling by forcer - Temperature*	Dates - from	to
5.	Date planted		
6.	Type storage after planting		
7.	Type container used		
8.	Soil mix used		
9.	Date brought into greenhouse		
10.	Flowering date		
11.	Day temperature		
12.	Night temperature		
13.	Fertilizer used	Quantity	Frequency
14.	Average stem length		
15.	Average bud count		
16.	Average price per stem		
17.	Percentage making salable stems		
18.	Additional comments		

* Answers to Questions 1, 2, 3 and 4 will be supplied by us. A duplicate of this questionnaire will be furnished to all customers, with each shipment of forcing bulbs.

Jan de Graaff

OREGON BULB FARMS

Box 512, Gresham, Oregon, U.S.A.

Phone: MOhawk 5-4498

Office Hours: Monday through Friday
8:30 a.m. to 4:30 p.m. Pacific Coast Time

1962-63

DISPLAY-PACKAGED LILIES DISPLAY-PACKAGED

SHIPPING WEIGHTS

Our packed shipping cases weigh approximately sixty pounds each. The lilies are packed:

3-4" 600	8- 9" 125
4-5" 500	9-10" 75
5-6" 300	10-11" 75
6-7" 200	11-12" 60
7-8" 175	12" 50

bulk pack bulbs per case.

To Our Friends and Customers Abroad:

While we are delighted to fill orders from abroad, it should be remembered that quantities are usually small and the number of documents involved, very large. Our farms are situated twenty-five miles from the nearest Federal and State certifying offices. We cannot ask the inspectors to come out at frequent intervals.

For this reason, we will have to assemble all foreign orders and have them inspected at one time. Experience has shown us that the best time to do this is *The Second Week of October* of each year.

As soon as the inspection is made, we shall dispatch the bulbs as per your instructions. Small shipments can be shipped by parcel post or air freight. Larger quantities travel safely in the vegetable or chill rooms of steamers leaving from the port of Portland, Oregon.

If you plan to order from us this year, then may we ask you to do so early to allow us time to obtain and prepare all documents in advance. Orders received too late to be included in the general inspection will be held until another year.

NORTH AMERICAN LILY SOCIETY

Every dealer should join this Society, if only to receive the fine Yearbooks, edited by Professor George L. Slate, and the fine bulletins. Membership is only five dollars per year and your check should be sent to Ernest Stokes, 21 Oakland St., Lexington 73, Massachusetts.

KODACHROME SLIDE LECTURE

A new, magnificent collection of one hundred slides with mimeographed outline for a lecture on lilies is available from us for a fee of \$5 per showing.

STORE COLLECTION—C-1—1962

In bulk pack—twenty-five bulbs of each variety in polyethylene bag, with peat-moss. Display lid with color pictures, planting instructions, banner.

	Size	Each	
25 Enchantment	5-6"	\$.20	\$5.00
25 Fiesta Hybrids	5-6"	.24	6.00
25 Golden Chalice	5-6"	.24	6.00
25 Mid-Century Mix	5-6"	.20	5.00
25 Olympic Hybrids	6-7"	.24	6.00
25 Valencia	5-6"	.24	6.00

C-1—150 bulbs in all, 25 of each in polyethylene bag offered at . . . \$32.00
Catalog value 34.00

Shipping Weight 35 pounds

Suggested retail value \$90.00

DISPLAY COLLECTION—C-3—1962

144 lily bulbs, packed three per bag, in polyethylene, with peat, color label on each bag, in our six compartment box.

All 6-7" size, priced per bag:

8 bags of 3 Auratum Platyphyllum . . .	\$1.31
8 bags of 3 Enchantment	.77
8 bags of 3 Golden Clarion	1.25
8 bags of 3 Olympic Hybrids	.77
8 bags of 3 Pink Perfection	1.85
8 bags of 3 Red Champion	.95

C-3—8 bags of each variety . . . \$ 48.00
Catalog value, wholesale 55.20
Minimum suggested retail value \$120.00

Shipping Weight 35 pounds



YOUR INVITATION TO VISIT US:

The horticultural trade and amateur growers are cordially invited to inspect our stocks. From Portland drive east through Gresham and follow the signs to Dodge Park, where our office and greenhouses are located. Office is closed on Saturdays and Sundays. Call MOhawk 5-4498 for special appointments. Our production fields are near Canby, Oregon, and are usually not open to visitors unless accompanied by authorized personnel.

FORCING COLLECTION—C-2—1962

Lilies in bulk pack, 25 bulbs per bag. Packed in our attractive display case.

	Size	per bulb
25 Harmony	5-6"	\$.24
25 Destiny	5-6"	.30
25 Joan Evans	5-6"	.24
25 Croesus	5-6"	.24
25 Enchantment	5-6"	.20
25 Cinnabar	5-6"	.36

Shipping Weight 35 pounds

Each lot of twenty-five bulbs packed in polyethylene bag, with peatmoss, with forcing instructions, in display case.

C-2—150 lilies in all \$36.00

CENTURY COLLECTION—C-4—1962

One hundred lilies in four varieties, each bulb individually packed in polyethylene bag, with color label—in our attractive color printed display case.

No. Bags	Size	Each
25 Golden Clarion	6-7"	\$.41
25 Olympic Hybrids	6-7"	.29
25 Enchantment	5-6"	.25
25 Prosperity	5-6"	.29

Shipping Weight 25 pounds

100 bags, individually packed . . \$ 30.00
Wholesale catalog value 31.00
Minimum suggested retail value 100.00

ECONOMY COLLECTION—C-5—1962

One hundred lilies in four varieties, bulk packed in lots of twenty-five, each lot in polyethylene bag with peat. Packed in our new four compartment box.

25 Royal Gold	6-7" val.	\$12.50
25 Enchantment	5-6" val.	5.00
25 Prosperity	5-6" val.	6.00
25 Olympic Hybrids	6-7" val.	6.00

In bulk pack, with one picture of each item, offered at \$28.00

Catalog value \$29.50

Suggested minimum retail price,
per bulb60
Shipping Weight 25 pounds per box.

SHIPPING SAVINGS

On early orders we can often effect great savings by shipping in pool trucks to the larger distribution centers of our country. Late orders and especially small orders travel best via parcel post or express. We need not remind our customers that the shipping charges on small lots are very high. Therefore, please order early.

